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Abstract

This annual report briefly reports on the activities of the JRC-IPTS project team in the Smart Specialisation Platform (S3P - as a part of the Knowledge for Growth Unit) in charge for the Danube-INCO.NET project. One of the main tasks of the Danube S3P team in charge of this FP7 project in the 2014-15 period was the identification of the most important Danube research and innovation (R&I) activities that could in future enhance the cooperation among the countries in the macro-region. R&I is a domain in which cooperation and knowledge-sharing across borders may crucially contribute to achieving the best possible results. Research and innovation strategies for smart specialisation (RIS3) developed by countries and regions open a new dimension for collaboration. Collaboration in RIS3 means combining complementary strengths, achieving critical mass, building-up necessary capacities to overcome bottlenecks and integrate better into the global value chains. The concerted and coordinated R&I activities of the Danube countries/regions could thus contribute significantly to the competitiveness and economic growth of the macro-region in the coming years.

Due to an important gap in the knowledge on the complementarity of the Danube countries' R&I strengths, the S3P Danube team's 2014-15 activities were aimed primarily at identification of the national and regional smart specialisation (S3) or simply R&I (for the non-EU countries) priorities of the Danube countries/regions and identify the common fields of R&I activities that could benefit from coordination and potential matchmaking at the macro-regional level.

The purpose of this report is to briefly report about the work done on the project during the 2014-15 period and increase the knowledge on the S3 tools introduced to advance collaboration in RIS3 process, increase cooperation opportunities in R&I areas along the Danube in order to enhance transnational and inter-regional initiatives and to explore possible alignment of the Danube countries'/regions' R&I agendas in the future. Based on original data for 13 countries and 2 regions (DE) in the Danube area, the report explores opportunities of transforming complementary assets into common specialisations. Our analysis revealed 4 main fields for future collaboration: advanced materials and manufacturing (KETs), ICT, sustainable innovations, and health. These very broad priorities provide a starting point for R&I collaboration initiatives and matchmaking in the Danube macro-region.

Keywords: Danube region, research and innovation, transnational cooperation, smart specialisation, S3.

1. Introduction

RIS3 represents a dynamic process to identify regional/national priorities where concentrated investment is likely to stimulate knowledge-driven growth in the coming years. The purpose of this matchmaking and information exchange report is to share knowledge on tools advancing collaboration in RIS3 process and to explore possible cooperation opportunities in the Danube macro-region in order to enhance transnational and inter-regional R&I initiatives. The report aims to support research and innovation oriented policy making in the Danube macro-region linking to the mainstream activities of S3 Platform (S3P) based at JRC-IPTS. The report relates to the Danube INCO.NET project's task T5.1: Smart Specialised Danube and promotes innovation policy in the region through support of smart specialisation strategies and peer review.

2. Framework for matchmaking and information exchange and objectives

The S3 Platform (S3P) has been working towards increased innovation and growth through smart specialisation in the Danube Region. A successful implementation of RIS3 depends on close collaboration across borders in order to take advantage of the best available knowledge, exploit opportunities and face challenges together. Matchmaking and information exchange are necessary components for initiating transnational or inter-regional collaboration. The task goes beyond merely supporting the initial phases of information exchange. S3P intend to build cooperation processes in different areas of common interest including matchmaking and support to a capacity building process for sustainable R&I-oriented policy making in the macro-region. Following a bottom-up approach, the S3 Platform's events aim to create an open and trusted learning environment where practical and conceptual aspects of RIS3 can be discussed and explored through challenges and experiences of individual regions. In addition S3 Platform offers user friendly on line tools that allow searching comparative regional/national information or partners in RIS3. They also provide benchmarking and policy support.

The S3P matchmaking, information exchange and collaboration tools and measures allow regions to reach the following outcomes:

- gain visibility all over Europe and have an opportunity to be recognised by other regions/ countries looking for collaboration;
- find synergies with RIS3 specialisation fields of other regions in an international context;
- find partners in similar or complementary RIS3 priorities where countries expect to succeed in the future;
- get an opportunity to feed the comparative information back into its RIS3 design process to possibly refine/sharpen strategic focus in order to eventually meet the requirement to have a limited set of R&I priorities as stipulated by the ex-ante conditionality clause for EU member states;[1]
- better understand how to incorporate transnational cooperation in RIS3 and increase knowledge on existing financial tools for cross-border and transnational cooperation.

[1] EU Regulation (1303/2013/EU); Regulation of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund.

2.1 Description of S3 Platform activities and target audiences

The S3 Platform offers several tools to support matchmaking, information exchange and collaboration. Five different activities are relevant to meet these goals. Firstly, the S3P designed the interactive online search tool Eye@RIS3 that visualises regional and national RIS3 priorities.[2] Secondly, S3P co-developed a Regional Benchmarking tool[3] that facilitates finding reference regions based on structural similarities together with Basque research institute ORKESTRA.

Thirdly, the EU Trade tool[4] depicting various trade networks between regions at NUTS 2 level and thus trade competitors within the EU was co-designed with the Netherlands Environmental Assessment Agency PBL. Fourth, S3P together with partner organisations has been organising numerous workshops where regional and national policy makers meet, learn from each other and discuss the design, development and implementation of RIS3. Finally, these activities are backed up by analytical work that contributes to the effectiveness of R&I ecosystems in Europe.

The target group of S3P tools is comprised of regional and national stakeholders active in the development and implementation of RIS3. The S3 Platform is working on the basis of a bottom-up approach, offering voluntary membership, which consisted at the end of 2014 of 15 EU countries, 153 EU regions, and 2 non-EU regions. To benefit from mutual learning activities and the tools provided by S3P, even more countries and regions have been eager to share the information on their RIS3 during the 2015. As a result of the collaboration with regional and national authorities, S3P manages a database with encoded R&I priorities of 22 EU countries, 179 EU regions, 6 non-EU countries, and 18 non-EU Regions. From those with encoded R&I activities 11 regions and 13 countries (9 MS and 4 non-EU countries) are forming an integrative part of the Danube macro-region.

2.1.1 Eye@RIS3 tool

Eye@RIS3 is an online database that helps to identify regions with particular R&I priorities and find partners for the implementation of innovation strategies, among others by making it possible to assess R&I priorities across Europe and to advance the development of RIS3.

The database provides information on the envisioned priorities of European regions and states, including non-EU countries. The purpose of the database is to give an overview of regional and national priorities in order to enable others to position themselves, to find their unique niches and to seek out potential partners for collaboration.

Policy makers are requested to introduce and update input on their R&I priorities in the database in order to have a realistic overview of RIS3 development. Responsible authorities and innovation organisations can use the simple template form to upload their envisaged priorities. The template includes the region's or country's name, a brief free-text description about the prioritised areas and the input based on three pre-defined categories with sub-categories. The three categories aim to combine the regional capabilities identified as starting points and the target markets being addressed with 'top down' EU wide policy objectives. The first two categories are based on NACE 1 and NACE 2 sectorial codes and OECD categories with some modifications. The third category contains ten EU-wide policy areas with subcategories. The categories are regularly updated and supplemented to adapt to the needs of the of policy makers.

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[2] http://s3platform.jrc.ec.europa.eu/eye-ris3

[3] http://s3platform.jrc.ec.europa.eu/regional-benchmarking

[4] http://s3platform.jrc.ec.europa.eu/s3-trade-tool

2.1.2 Regional Benchmarking tool

For developing sound innovation strategies for smart specialisation, it is important to transfer practices from other regions. One of the most basic conditions required for drawing lessons from regional benchmarking is to compare homogeneous regions. Looking at regions with similar structures in terms of social, economic, technological, institutional, and geographical characteristics makes it easier to understand what policies and practices can effectively be transferred and what effects they could have on a similar region. Structurally similar regions may be either better or worse in terms of performance, economic success, and innovation outcome. Policy learning is most likely to be more effective if peers are sufficiently similar.

In the benchmarking tool structural similarity is evaluated on the basis of 42 variables representing socio-demographic characteristics, sectorial structure, technological specialisation, economic openness and outward linkages, business size, type and quality of institutions, social and entrepreneurial attitudes, and human capital. The variables are aggregated into a synthetic index that provides a unique measure of 'structural distance' between regions. The interactive tool generates a list of regions sorted in descending order from the ones that are more similar (top) to the less similar (bottom) to a given region previously selected.

Benchmarking based on structural similarity enables the region to identify its competitive advantages through systematic comparisons with other regions or to map the national and international context in search of examples to learn from. At this point, the tool has mainly regional level data (NUTS 2) for all EU member states except for Croatia which was excluded due to lack of data.

2.1.3 EU Trade tool

A new tool has been developed to assess the outward connectivity among regional economies comparing their trade data. Flows of goods show natural links between countries and regions. The competitiveness of regions and countries is to a large extent determined by their trade connections with others. These trade connections show in which markets firms are active and where the main competitors come from. This tool has been designed in cooperation with the Netherlands Environmental Assessment Agency PBL. It allows exploring competitiveness scores, trade network scores and regional exports/imports by economic sectors in the period 2000-2010. When the statistical data will be available for the following years the tool will be updated accordingly.

2.1.4 Peer review workshops and thematic events

Peer review is one more collaborative tool developed by the S3 platform to assist its member regions in developing sound RIS3 strategies. Peer review is an important mutual learning and knowledge dissemination channel [5]. In the period 2014-15 numerous S3 peer review workshops took place: Peer Review Workshop in Baiona, Vigo (Galicia/Spain) in November 2014, the in-depth Peer Review Workshop of the region of Eastern Macedonia and Thrace (GR) in February 2015 and Peer Review Workshop in Podkarpackie (PL) in March 2015. The regions reviewed through the methodology developed by S3P were: Galicia (Spain), Norte (Portugal), Burgundy (France), South

[5] The methodology and more information on the individual workshops held so far is available at: http://s3platform.jrc.ec.europa.eu/peer-review

Ostrobotnia (Finland), Eastern Macedonia and Thrace (Greece), Päijät-Häme region (Finland) and Podkarpackie region (Poland)[6]. Each of those events typically gathered around 45-60 participants including participants and experts from Danube countries (Slovenia, Croatia, Bulgaria, Germany and Serbia) who have had the opportunity to share experiences, advice, recommendations and comments on the presented innovation strategies. The peer review workshop with a particular focus on cross-border cooperation and thus built on the prior Danube-INCO.NET peer review workshop held in April 2014 in Novi Sad[7] was the one held in Baiona (Spain). Among others, the collaboration between Serbian and Hungarian regions in the INTERRIS project was presented[8]. The results of each workshop are summarised in workshop feedback reports compiled by JRC-IPTS with expert collaboration and have been distributed to all the participants of each peer review workshop. The methodology of peer reviews and teaming-up more competitive regions with less competitive ones in a trans-regional/trans-national policy learning process enables exchanging ideas, sharing the knowledge and increasing cohesion of the regions.

S3P also arranges thematic workshops on different topics that are important to regions. In the framework of Danube country collaboration the workshop/round-table discussion on the role of smart specialisation in facilitating funding mechanisms of trans-national R&I cooperation was held back-to-back to the 3rd Annual Forum of the EU Strategy for the Danube Region carried out in relation to the financial design of transnational R&I projects and the role of smart specialisation at the end of June 2014 in Vienna, Austria[9]. The workshop conclusions suggested focusing future efforts in the RIS3 support for the Danube roadmap on a limited number of concrete issues aiming at achieving tangible outcomes by Mid-2015. A follow-up Danube S3 Workshop on "Gathering Opportunities Around RIS3 Priorities" was organised in July 2015 in Vienna[10] with the aim of sharing some examples of successful and sustainable transnational R&I partnerships, giving a frame for exploring cooperation opportunities within the selected RIS3 priority areas in the Danube region, and identifying those opportunities that would have potential to develop into the new joint initiatives or collaborative commitments to be further evolved into the projects which could benefit from INTERREG Danube Transnational Programme 2014-2020, Horizon 2020 or other financial sources available for the Danube region. The workshop had a focus on 4 thematic priorities: ICT, Health, Energy, Sustainable Innovations that have stemmed from the reports and inputs made by the S3 Platform's Danube team.

2.1.5 Analytical support

A number of S3P Policy Briefs and Working Papers issued by the S3 Platform in collaboration with some external experts are investigating the relevant topic for inter-regional and transnational collaboration.

Uyarra, Sörvik and Midtkandal (2014)[11] examine the role of inter-regional collaboration in RIS3. They provide a conceptualisation of inter-regional collaboration within the framework of RIS3 by drawing from the literature on innovation policy. They develop an

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[6] Details of the mentioned workshops with the further information on the peer reviewed regions are available at: http://s3platform.jrc.ec.europa.eu/s3-design-peer-review

[7] http://s3platform.jrc.ec.europa.eu/14th-peer-review-10-11-april-2014-novi-sad

[8] Transfer of the methodology of regional strategic planning and cross-border strategies of innovation Southern Great Plain in Hungary and Vojvodina in Serbia, see http://www.bsccentar.rs/en/reference/ipa-hu-srb-%E2%80%93-interris.html

[9] http://s3platform.jrc.ec.europa.eu/danube-workshop-vienna

[10] http://s3platform.jrc.ec.europa.eu/-/danube-s3-workshop-gathering-opportunities-around-ris3-priorities-vienna?inheritRedirect=true&redirect=%2Fdanube-macroregion-activities

[11] http://s3platform.jrc.ec.europa.eu/documents/10157/409345/Interregional%20collaboration%20in%20RIS3_Uyarra_Sorvik_Midtkandal_FINAL%20for%20PUBLICATION.pdf

analytical framework to better understand the multiple dimensions of inter-regional collaboration, namely the why, what, where, who and how of collaboration. Finally, they explore how inter-regional collaboration varies according to the different steps of the RIS3 process.

Building on the recent activities of the S3P on the role of smart specialisation in facilitating funding mechanisms for trans-national R&I cooperation, a series of the workshops and round-table discussions fed into the policy brief by Gnamus, Hegyi and Perez (2014)[12] on financing transnational R&I cooperation. The authors present the state of the art within Danube cooperation activities and provide guidance on how to better implement governance mechanisms for transnational R&I cooperation. They revise the existing financial tools for cross-border and transnational cooperation to support project holders and to identify synergies between various EU funding sources that may be exploited through transnational R&I cooperation in the Danube region. Hard copies have been made available for the distribution at R&I-related events across the Danube macro-region.

Another policy piece by Kleibrink (2014) stresses the differences between established and consolidated market economies in many EU member states and the low-trust environments in many post-socialist countries that aggravate R&I cooperation.

Further more specific work regarding smart specialisation in macro-regional dimension: mapping R&I priorities in the Danube region with further detailed analysis of the S3 data is being planned for the S3 Policy Brief later in 2015 edited by the S3 Danube team.

[12] http://s3platform.jrc.ec.europa.eu/-/developing-danube-r-i-projects-across-borders-how-to-make-the-join-use-of-eu-funds-a-reality-?inheritRedirect=true&redirect=%2Fdanube-macroregion-activities

3. Mapping R&I priorities in the Danube and main findings

The data accumulated so far on R&I priorities in the countries and regions allow us to better understand similarities and links between regions and countries in the Danube region. Mapping Danube R&I priorities was carried out with the objective to address two main issues: (1) to identify the most prominent areas for collaboration for advancing joint initiatives and projects in RIS3; and (2) to analyse how and if national and regional RIS3 match with the EUSDR priorities.

3.1 Methodology

The mapping of Danube R&I priorities as codified in national and regional strategy documents is based on the analysis of priorities encoded in the Eye@RIS3 database. The analysis includes data on 13 EUSDR countries and 3 regions. For selecting the countries and regions listed in Table 1, the following criteria were applied: level at which the relevant RIS3 and related Operational Programmes were adopted. In the case of the non-EU countries the approximate R&I priorities were taken from the existing research and innovation strategies, which are, by the nature of processes that led to these document, of course not really comparable to the smart specialisation strategies but were the closest proxy of R&I priorities for those countries. As most of the Danube EU countries have decided to develop their RIS3 strategies at national level, besides the national RIS3 priorities only 3 Danube EU regions were taken into account (two German regions and Prague-CZ) which have built their RIS3 on the financial resources of the ESIF Operational Programmes were included into analysis. In total, the Danube countries/regions have 105 R&I priorities.

Table 1: The Danube countries and regions and their R&I priorities.

Danube Countries/Regions	Number of priorities
Austria (AT)	6
DE - Baden-Württemberg (DE1)	10
DE - Bayern (DE2)	6
Bosnia and Herzegovina (BA)	6
Bulgaria (BG)	4
Croatia (HR)	6
Czech Republic (CZ)	4
CZ - Praha (CZ01)	7
Hungary (HU)	8
Moldova (MD)	5
Montenegro (ME)	9
Romania (RO)	8
Serbia (RS)	7
Slovakia (SK)	4
Slovenia (SI)	9
Ukraine (UA)	6
Grand total	**105**

The analysis was based on the categories offered in the Eye@RIS3 database which allow to group countries and regions according to the thematic R&I priorities. Three main

categories (as explained in the chapter 2.1.1) make possible comparing and revising the results. In every category the most popular priority areas were searched, compared and explained. For the final results 4 main priority areas in each category were analysed more in detail, and four most common priority areas for the Danube countries were identified. The outcomes were compared with the further descriptions of the priority areas encoded by the countries and the regions.

The analysis provided below depend to large extend on the data provided by the countries and regions. The thematic categories in the data based on NACE 1 and NACE 2 sectorial codes are quite broad and if the national or regional stakeholders did not mark the subcategory and/or provide some further comprehensive information on specific niches in the description field, the encoded data in the Eye@RIS3 tool does not provide the priority choice which would correspond to the required detail. As required by the S3 approach the database entries for many regional/national priorities are not confined to activities within a single traditional sector, but are rather merging several cross-sector activities like KETs, ICT or introducing horizontal priorities like "Business consultancy" or "Service innovation". Therefore the results of the analysis need to be interpreted with caution.

3.2 Analysis on common RIS3 areas in Danube countries and regions

The most common priority areas were identified by examining Eye@RIS3 data on R&I capabilities, target markets and the addressed EU policy objectives. According to the categories indicating regional capabilities (Table 2) the major common fields are Manufacturing & Industry, and Information & Communication Technologies (ICT). Going a step further, the analysis shows that within Manufacturing & Industry almost half of the entities indicate KETs as priorities, which is further broken down to sectorial specialisation in biotechnology, nanotechnology, machinery and equipment, advanced manufacturing and advanced materials. Another part of industrial capacities is related to eco-innovation and sustainable innovation as a priority linked to resource efficiency in manufacturing. Capabilities in ICT can be further disaggregated as ICT specialisations in the areas of computer, electronic & optical products, electrical equipment and ICT in manufacturing. However, no particular field is prevailing. Priority in ICT almost in all cases complies with the EU priorities enshrined in the Digital Agenda for Europe initiative.

Table 2: Major priority areas by R&I capabilities.

R&I capabilities	No. of priorities indicated by countries/regions
Manufacturing & Industry	34
Information & Communication Technologies (ICT)	16
Services	12
Energy Production & Distribution	12
Human Health & Social Work Activities	9

Target market category analysis (Table 3) reaffirms specialisation in manufacturing and industry. Within manufacturing and industry the sub-category is not indicated by the countries/regions in most of the cases and it makes deeper analysis difficult. Food, beverage & tobacco products and Motor vehicles & other transport equipment are among sectors mentioned more frequently. Services, ICT, health and energy markets are quite important to substantial number of countries/regions.

Table 3: Major priority areas by target markets.

Target markets	Countries/regions indicated as priorities
Manufacturing & Industry	33
Human Health & Social Work Activities	13
Services	12
Information & Communication Technologies (ICT)	12
Energy Production & Distribution	12
Creative, Cultural Arts & Entertainment	4
Public Administration, Security & Defence	5
Transporting & Storage	5

Within EU priority category (Table 4) most of the countries/regions indicated sustainable innovation as the priority area, followed by Digital agenda and KETs. Sustainable innovation is rather horizontal priority embracing several different fields, so it do not prevail in the categories of capabilities and target markets.

Sustainable innovation in the subcategory field can be decoded as priority in Sustainable energy & renewables and Resource efficiency in the half of cases, which in capability field further splits into Energy production & distribution and Manufacturing & Industry. Manufacturing and industry is conceived as general priority by most of the regions. Since it divides into many sectors without sub-category indicated it is not suitable for connecting regions in RIS3. Other sub-categories of sustainable innovation indicate fields of eco-innovations and sustainable agriculture.

Rest two most common priorities - Digital Agenda and KETs - comply with ICT and Manufacturing & industry/ Advanced materials in biotechnology, nanotechnology or other fields as described above. Public health & security emerges as an important priority which because of further splitting into Human health & social work activities and Manufacturing & industry meaning Biotechnology or Basic pharmaceutical products & pharmaceutical preparations was not vivid in the capability category.

Table 4: Major priority areas by EU priorities.

EU priorities	Countries/regions indicated as priorities
Sustainable innovation	29
KETs	19
Digital Agenda	15
Public health & security	14
Specific local policy priority	10
Service innovation	7

Figure 1 visualises the main priorities as described by policy makers in EUSDR countries and regions. By visual appreciation the innovation activities in the Danube macro-region appear to be largely technology-driven with a strong focus on energy, ICT and materials as well as sustainable production and services.

Figure 1: R&I priorities across the Danube region.

Having the results from the 3 category areas, the main priority areas in each category were analysed, revised and the most promising sectors for R&I collaboration in the Danube region were derived:

- Advanced materials and manufacturing (KETs)
- ICT
- Sustainable innovations and
- Health.

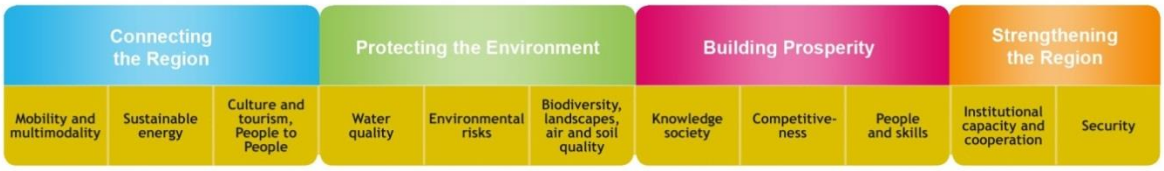
The priority areas derived were reviewed with the descriptions of priorities encoded by the countries as shown in Figure 2 which summarises the descriptions of encoded R&I priorities and supports the selection of the mentioned four priority areas. In every category, there is a critical mass of Danube countries/regions with their S3 / R&I* priorities (*for the Non-EU countries) in these areas. In every broad area a more detailed niche specialisation can be sought. KETs comprise specialisations in biotechnology, nanotechnology, electro-technology, mechatronics, micro-technology and others. Sustainable innovation puts major focus on energy and resource efficiency. ICT is conceived as a cross-cutting priority with ICT applications in industry and services. Health consists of R&I priorities in health care, health technologies, biomedicine, healthy food and healthy life.

Figure 2: Four main priority domains across the Danube region.

3.3 Links between R&I priorities in countries/regions and EUSDR Priority Areas

Another issue addressed by this preliminary analysis is how national and regional RIS3 and R&I* (*for the Non-EU countries) strategies meet the EUSDR priorities.

Figure 3: The four EUSDR pillars with the 11 Priority Actions.



As shown by the Figure 3, the first pillar "Connecting the Danube Region" focuses on transport, energy and culture/tourism issues; the second EUSDR pillar "Protecting the Environment" focuses on water, environmental risk management, biodiversity, landscapes, quality of air and soil; the third pillar "Building prosperity" supports developments in the fields of innovation, information society, competitiveness of enterprises, education, labour market and marginalised societies; and the fourth pillar "Strengthening the Region" addresses issues of institutional building and security.

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As shown from the data in Table 5 there is clearly a room for higher impact of the 2014-2020 R&I activities in the countries/regions of the Danube macro-region on the selected EUSDR priority actions, especially in the vertical priorities.

Only the activities related to the PA7 "Knowledge Society" with ICT, innovation, education and research and those related to the PA5 "Environmental Risks" are omnipresent among the Danube countries'/regions' S3/R&I priorities with 12 and 8 countries/regions that have encoded the R&I activities to be financed in the period 2014-2020 related these two areas respectively.

The R&I activities related to other EUSDR priority areas were less represented among the S3/R&I activities of the Danube countries/regions. Four Danube countries/regions were reporting R&I activities on the PA3 "Culture & Tourism", four in the PA1 "Mobility and Intermodality", and three countries/regions reported PA2 "Sustainable Energy" among the S3 / R&I priorities respectively.

R&I activities in the PA4 "Water Quality" and PA11 "Security" were reported only by two Danube countries, while none of the Danube countries/regions reported any concerted R&I activities in the fields of PA6 "Biodiversity, landscapes air and soil quality", PA8 "Competitiveness", PA9 " People & Skills" and PA10 "Institutional capacity & cooperation" planned for the period 2014-2020. Anyhow, as these latter, especially PA8, PA9 and PA10, are rather horizontal activities indeed the S3 / R&I strategies are actually not the most appropriate source to report on the planned activities in these fields.

Table 5: Number of S3 / R&I priorities of the 13 Danube countries and 3 Danube regions vis-à-vis Priority Actions of the EUSDR.

EUSDR Priorities	**Danube Countries/Regions**																
	AT	**DE1**	**DE2**	**BA**	**BG**	**CZ**	**CZ1**	**HR**	**HU**	**MD**	**MN**	**RO**	**RS**	**SI**	**SK**	**UA**	**Total**
Danube **PA1:** Mobility and Intermodality - Intelligent mobility	1	1						1						1			**4**
Danube **PA2:** Sustainable Energy										1				1		1	**3**
Danube **PA3:** Culture & Tourism - Culture										1	1	1	1				**4**
Danube **PA4:** Water quality - water												1		1			**2**
Danube **PA5:** Environmental Risks - Environment	1	1						1	1			1	1	2			**8**
Danube **PA6:** Biodiversity, landscapes air and soil quality - Biodiversity																	**0**
Danube **PA7:** Knowledge Society - ICT	1	1	1		1	1		1	1		1		1	1	1	1	**12**
Danube **PA8:** Competitiveness - competitiveness & entrepreneurship																	**0**
Danube **PA9:** People & Skills - Skills																	**0**
Danube **PA10:** Institutional capacity & cooperation																	**0**
Danube **PA11:** Security								1				1					**2**
TOTAL:	**3**	**3**	**1**	**0**	**1**	**1**	**0**	**4**	**2**	**2**	**2**	**4**	**3**	**6**	**1**	**2**	**35**

4. Follow-up activities

The analysis in this report provides preliminary evidence on the most promising areas for R&I collaboration and matchmaking. The analysis can be further complemented using the EU trade tool. Also it could be useful to check for some competitive top rated clusters in the areas detected comparing the outcomes of this analysis with the data of European Cluster Observatory and other databases. Evidence of the bottom-up driven transnational or inter-regional collaboration would confirm that entrepreneurial discovery process was respected in the development of the RIS3 strategies.

Following S3P work to facilitate collaboration among regions and countries, a survey to collect successful trans-regional and trans-national R&I partnerships has been launched in 2014, the objective of which was to increase awareness of the successful methods, measures, and instruments used for transnational collaboration and to exploit existing opportunities. The outcome of the survey had served as the basis for the establishment of a repository of cases which have allowed discussing practices and finding possible supporting instruments and measures tackling the bottle-necks of trans-national R&I cooperation. These partnerships were also linked to the four main priority areas identified in this report's analysis. The outcomes have served as basis for targeted workshops that have been organised in 2015[13].

[13] http://s3platform.jrc.ec.europa.eu/s3-cooperation

5 Conclusions and Recommendations

The potential of Danube regions and countries to engage in transnational and inter-regional policy collaboration in R&I remains underexploited. An outward looking innovation policy and collaboration with others can help especially less-developed territories to combine complementary strengths, exploit their competences in R&I, build-up necessary research capacities, overcome lack of critical mass and fragmentation and gain better access to the global value chains.

There is a room for higher impact of the R&I activities in the Danube macro-region on the selected EUSDR priority actions, especially in the vertical priorities. The R&I priorities in the Danube are rather broad and often horizontal, which makes difficult to clearly identify specialisations and new innovation activities. Our mapping revealed four most prevailing sectors: advanced materials and manufacturing (KETs), ICT, sustainable innovations, and health. These priorities, although quite general and embracing many sub-sectors, can be used as a starting point for R&I collaboration initiatives. Finding the right partners in these areas can be facilitated by existing activities and structures already in place.

However, the results from this first mapping should be taken with grain of salt Due to the methodological limitations and the shortcomings of the data what was mentioned in the chapter 3.2.1 the results of the analysis have to be interpreted adequately. Transnational and inter-regional cooperation should not be confined only to priorities identified in RIS3 or similar innovation strategies. It is true that critical mass and funding opportunities are likely to be more developed in these common areas. Yet, many interesting and promising projects will also emerge outside these areas. It will be up to analysts, innovation managers and policy makers to make sure that these new ideas do not get lost under the radar of the prioritisation areas defined in official strategy documents.

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